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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,534

08/15/2006

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HIYO3002/GAL

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EXAMINER

SHTERENGARTS, SAMANTHA L

ART UNIT

PAPER NUMBER

1626

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DELIVERY MODE

01/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,534	Applicant(s) HIYOSHI ET AL.	
	Examiner Samantha L. Shterengarts	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-13 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>28 Sept 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. The instant application is a national stage entry of PCT/JP05/02140, filed February 14, 2005, which claims foreign priority to Japanese Application no. 2004-038874, filed February 16, 2004.
2. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) due to an interfering reference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on September 28, 2006 was in compliance with the provisions of 37 CFR 1.97 and 37 CFR 1.98. The IDS document was considered. A signed copy of form 1449 is enclosed herewith.

Election/Restrictions

4. Upon further consideration, the restriction and election of species requirements are withdrawn. Claims 1-14 are examined on their merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

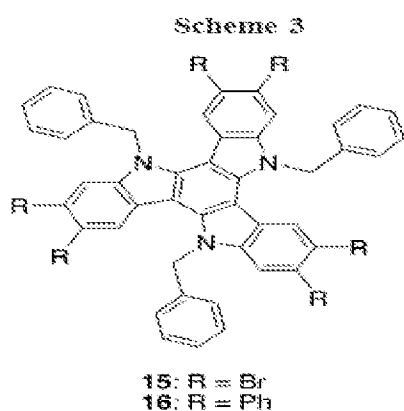
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 1626

5. Claims 1 and 14 are rejected under 35 U.S.C. 102(a) as being anticipated by Lor-Gomez et al. [Lor-Gomez, Berta. Synthesis of a Triaza Analogue of Crushed-Fullerene by Intramolecular Palladium-Catalyzed Arylation. *Organic Letters* 6(17) (2004) 2993-2996.]

In Scheme 3 on page 2995, the following compounds anticipate the instantly claimed compounds of 1 and 14.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1626

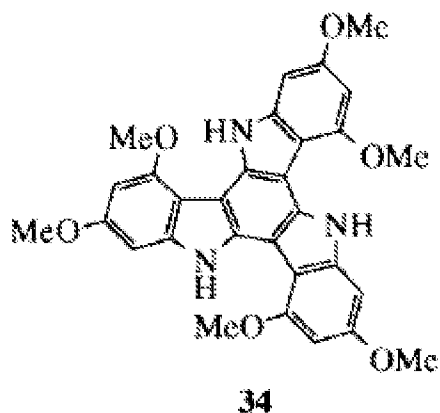
6. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. [Black, David StC., Synthesis of Biindolyls by the Reaction of Indoles with Indolin-2-ones and Phosphoryl Chloride or Trifluoromethanesulfonic Anhydride. Tetrahedron. 52(13) (1996) 4697-4708.]

Determining the scope and contents of the prior art

Black et al. discloses obvious variants of the instantly claimed compounds and processes for preparing them.

Ascertaining the difference between the prior art and the instant claims

Compound 34 on page 4701 is shown below:



The difference between this compound and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims. The process for preparation of this compound, also on page 4701, shows the reaction of a benzimidazolone with Phosphoryl chloride to produce compound 34. The difference between the process and the instantly claimed process of claim 2 is that the nitrogen

Art Unit: 1626

atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims.

Resolving the level of ordinary skill in the art – Prima Facie Case of Obviousness

MPEP 2144.08.II.A.4(c) states, "...consider teachings of a preferred species within the genus. If such a species is structurally similar to that claimed, its disclosure may motivate one of ordinary skill in the art to choose the claimed species or subgenus from the genus, based on the reasonable expectation that structurally similar species usually have similar properties."

To those skilled in the chemical art, one homologue is not an advance over another member of a homologous series. The reason for this is that one of ordinary skill, knowing the properties of one member of series, would know what properties to expect in other members. The interchange of alkyl and hydrogen is obvious in and of itself. *Ex parte* Bluestone, 135 USPQ 199, *In re* Henze, 85 USPQ 261 (1950), *In re* Wood, 199 USPQ 137 (CCPA 1978), and *In re* Lohr, 137 USPQ 548, 549 (CCPA 1963).

One of ordinary skill would be motivated, from the exemplified embodiments in the prior art disclosure, to make the modification required to arrive at the instant invention with reasonable expectation of success for obtaining an additional compound for the same utility. The motivation would be to make additional compounds for the same quoted purpose.

Thus, the instant claims are *prima facie* obvious over the teaching of the prior art.

7. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manini et al. [Manini, Paola. Acid-Promoted Competing Pathways in the Oxidative Polymerization of 5,6-

Art Unit: 1626

Dihydroxyindoles and Related Compounds: Straightforward Cyclotrimerization Routes to Diindolocarbazole Derivatives. Journal of Organic Chemistry, 63 (1998) 7002-7008.]

The instantly claimed compounds and processes for production are obvious over Compound 10 on page 7004, compound 16 on page 7005, and products of scheme 1 on page 7006, as well as processes of producing because the difference between these compounds and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims.

See *prima facie* obviousness rejection in section 6 above.

8. Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson et al. [Robertson, Neil. Preparation, X-ray structure and properties of a hexabrominated symmetric indole trimer and its TCNQ adduct: a new route to functional molecular systems. Journal of Materials Chemistry, 10 (2000) 2043-2047.]

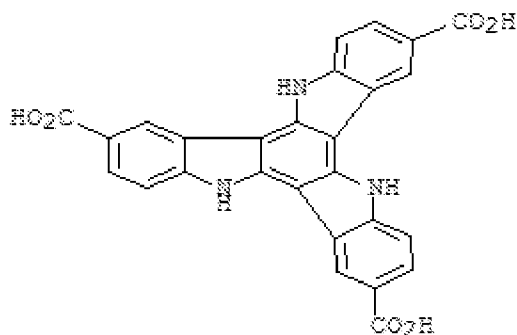
The instantly claimed compounds are obvious over Compound 2 on page 2044 because the difference between these compounds and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims.

See *prima facie* obviousness rejection in section 6 above.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (JP-2004-123619).

Art Unit: 1626

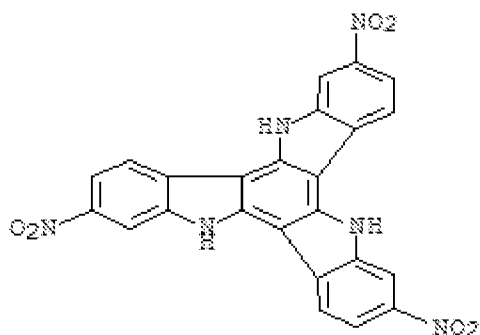
The instantly claimed compounds are obvious over the following compound because the difference between these compounds and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims.



See *prima facie* obviousness rejection in section 6 above.

10. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (JP-2004-055240).

The instantly claimed compounds are obvious over the following compound because the difference between these compounds and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims.



Art Unit: 1626

See *prima facie* obviousness rejection in section 6 above.

11. Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (U.S. Patent no. 7,205,071).

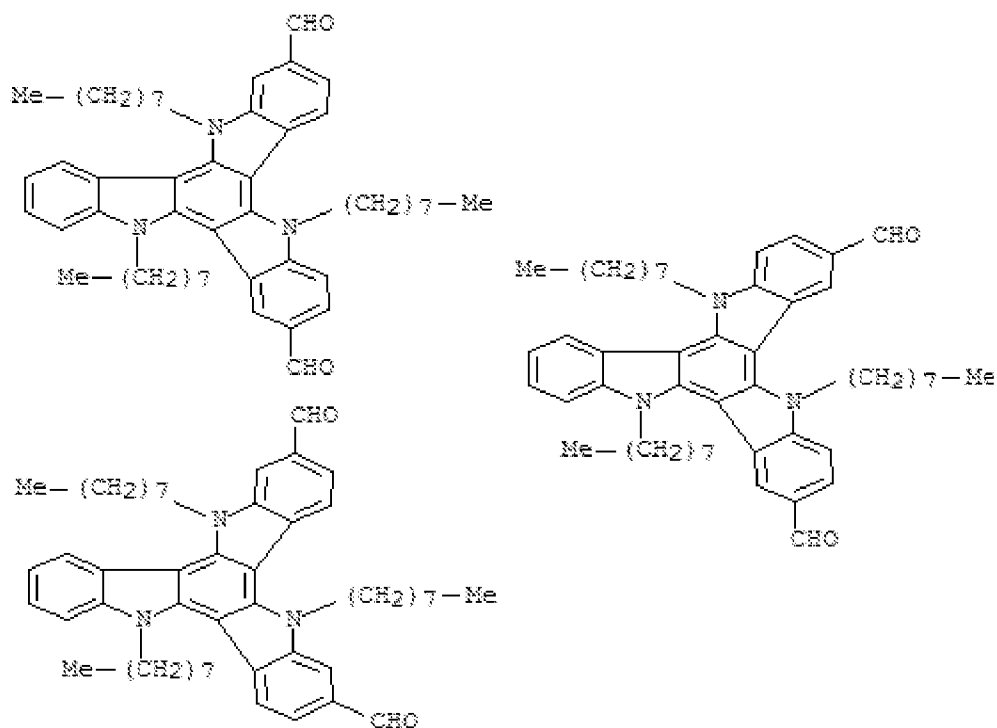
The instantly claimed compounds are obvious over the preferred embodiments of U.S. Patent no. 7,205,071 because the difference between these compounds and the instantly claimed compounds is that the nitrogen atom in the indole ring is attached to a hydrogen atom, rather than an alkyl group as in the instant claims. The preferred embodiments list compounds wherein the instant claims R₁, R₂, R₃, and R₄, can be halogen, hydroxyl, carboxyl, nitro, cyano, alkyl, aryl, alkoxy, alkylthio, and arylthio, and instant substituent R₅ is H instead of alkyl.

See *prima facie* obviousness rejection in section 6 above.

12. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-288239 and JP 2001-261680.

The instantly claimed compounds are obvious over the following compounds because the difference between these compounds and the instantly claimed compounds is that the R₅ group is C₈ rather than C₆. These are obvious variants because they are homologues of the same series. The processes for preparing the instantly claimed compounds are obvious for the same reason; the difference between these compounds and the instantly claimed compounds is that the R₅ group is C₈ rather than C₆.

Art Unit: 1626



See *prima facie* obviousness rejection in section 6 above.

Allowable Subject Matter

13. Subject matter of claims 3-13 is allowable.

Conclusion

14. No claims are allowed.
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samantha Shterengarts whose telephone number is (571)270-5316. The examiner can normally be reached on Monday thru Thursday 9-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Samantha L. Shterengarts/
Examiner, Art Unit 1626

/Kamal A Saeed/
Primary Examiner, Art Unit 1626